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Goal-Directed Fantasy, Imaginative Involvement, and the Development of Suggestibility

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GOAL-DIRECTED FANTASY, IMAGINATIVE INVOLVEMENT,
AND THE DEVELOPMENT OF SUGGESTIBILITY

BY

MARTIN W. HAM

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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ABSTRACT

Studies have repeatedly demonstrated a developmental trend in suggestibility -- responsiveness to suggestions traditionally associated with the term hypnotism is low for those under six years of age, rises to a peak near the ages of nine through eleven, and progressively declines thereafter. It has also been consistently shown that with adult populations, involvement in task-relevant imaginings, functions as a cognitive strategy enhancing response to suggestion. On the basis of evidence such as this, at least one investigator, J. Hilgard, has suggested that changes in responsiveness with age are due to variations in imaginative involvement. Specifically, it has been proposed that the decline in suggestibility may be the result of an increased developmental trend toward a rational-logical mode of thinking, which is inconsistent with the involvement in imaginative processes so important in responsiveness to suggestion. While the developmental literature relating to free fantasylike activity lends some support to this notion, no previous study has attempted to determine either a) the relationship between the passing or failing of suggestions and involvement in task-relevant imaginings in subjects from the lower age levels, or b) changes occurring in these imaginative involvements with age.

In the present investigation, one hundred subjects between the ages of eight and seventeen were individually tested in a single

session. Each subject was administered standardized task-motivational instructions followed by an arm-levitation suggestion, an arm-catalepsy suggestion, and an amnesia suggestion for the number four. Each subject was interviewed immediately after his response to each suggestion to determine whether or not he engaged in suggestion-related imaginings and, if so, the elaborateness and duration of these imaginings.

It was found that, regardless of age, subjects who passed the suggestions a) tended to report engaging in suggestion-related imaginings, whereas those who did not respond were less likely to engage in this pattern of imaginative responding, and b) reported engaging in imaginings that were more elaborate and of longer duration than those who failed the suggestions. In addition, partial support was obtained regarding the notion of age trends in imaginative involvement. Elaborateness and duration of imaginings were characteristically low for the youngest subjects, rose to a peak around the ages of ten to twelve, and declined thereafter. However, analyses indicated that only for elaborateness of imaginings in response to the amnesia suggestion was there a significant curvilinear relation with age; the remaining relationships, while in the same direction, did not achieve conventional levels of significance. It is suggested that future research considering developmental trends in imaginative involvement may prove to be more productive if variations are examined across one-year age groups, and a larger battery of test suggestions is employed.

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I

HISTORICAL PERSPECTIVE

Four sets of phenomena have traditionally been subsumed under the rubric of hypnotism. These include: a) heightened responsiveness to suggestions for arm lowering, hand anesthesia, visual hallucination, selective amnesia, and the like; b) observable changes in posture and movements such as limpness-relaxation, lack of spontaneity, fixed gaze, and psychomotor retardation; c) reports of unusual alterations in body feelings such as changes in the size of the body or body parts and feelings of unreality; and d) post-experimental reports of having entered a unique state of consciousness.

Historically, a variety of theories have been put forth in an attempt to explain the occurrence of phenomena such as these. Yet, one conceptualization has been dominant for the past 100 years. Basic to this conceptualization, which has commonly been labeled the trance-state approach, are two assumptions:

1) When a ritualistic ceremony commonly labeled as hypnotic induction procedure is successful, a unique state of consciousness is induced which differs fundamentally from the waking state. This state has been variously termed as the hypnotic state, trance, or hypnosis.

2) The four sets of phenomena traditionally subsumed by the term hypnotism result from the operation of this unique trance state. Moreover, the deeper this state, the more readily these phenomena are manifested.

Although the trance-state conceptualization has been dominant during the past century, critics have periodically asserted that the occurrence of hypnotic phenomena need not be assumed to result from the operation of an unusual state of consciousness. For instance, as early as 1823, Alexander Bertrand concluded that:

"...The psychological phenomena observed during the (hypnotic) state are not exceptional, but are normal, or at least phenomena which can be observed under various conditions. Artificial somnambulism...serves merely to render conspicuous and to amplify phenomena dependent upon the working of the general laws of imagination, expectant attention, and desire" (Bertrand, cited in Janet, 1925, vol. I, p. 157).

Nearly a quarter of a century later, James Braid, in his theory of monoidelism, wrote that, "hypnotism occurs only if the subject knows what is expected of him and voluntarily conforms to the demands of the operator (hypnotist) (Braid, 1843). More recently, Arnold (1946) proposed that subjects respond to suggestions and define their behaviour as involuntary (that is, something which seemed to happen to them and which they did not initiate themselves) when they imagine situations which would regularly produce the response. Specifically, Arnold described this process in the following manner:

"...There is one condition which must be fulfilled if the subject is to obey the hypnotist's suggestion; he must literally think as the operator wants him to think. In every instance in which

the subject cannot be hypnotized, he reports afterwards either that he could not forget the absurdity of the situation, perhaps because he kept thinking of something else; or he admits that he deliberately resisted either by criticizing the experimenter's procedure to himself, or by starting to think of something else.... (When given a suggestion) we visualize ourselves in the situation whenever it is described verbally...we re-focus on it (the suggested situation) and thus relive it. When the experimenter insists 'your eyelids are getting heavy' or 'you are falling forward', he invites the subject to imagine himself in that particular situation" (Arnold, 1946, pp. 8-9).

Despite its historical expression, skepticism such as this regarding trance-state assumptions has largely been ignored. Only within the past two decades have approaches which do not draw a distinction between hypnotic and other behaviors attained maturity. To a large extent, this shift has been due to efforts directed toward pointing out serious shortcomings in the traditional approach. Specifically, three major objections have been raised. First, there are no valid criteria for the presumed trance-state. For nearly a century, investigators have been searching unsuccessfully for a physiological index which differentiates individuals judged to be hypnotized from those judged to be awake. Not only are there no unique physiological changes associated with this presumed

special state, but physiological functioning continuously varies in response to the suggestions which the hypnotic subject is given and with the activities he is asked to carry out (Barber, 1961; Chertok & Kramarz, 1959).

Inasmuch as physiological indices are unavailable, adherents of the trance-state formulation have frequently suggested that the trance-state can be inferred from trance-like appearance, changes in body feelings, and reports of having been hypnotized. However, criteria such as these are invalid because they are deeply embedded in circularity; that is, the presence of a trance-state is inferred from subjects' trance-like appearance, changes in body feelings, and reports of having been hypnotized, and, turning around full-circle, these phenomena are then explained by stating that the subjects are in a trance-state (Barber, 1969).

As noted previously, the trance-state formulation assumes that heightened responsiveness to suggestion is the result of the operation of a unique state of consciousness. It follows from this that non-hypnotic subjects should exhibit little, if any, response to suggestions for arm lowering and levitation, hand anesthesia, visual hallucination, selective amnesia, and the like. Experimental evidence, however, has failed to support this notion. Rather, it has been consistently demonstrated that a surprisingly high proportion of subjects, who have not been exposed to an hypnotic induction procedure, respond to test-suggestions. For example, Barber and Calverley (1964) found that in a group of control subjects, simply told to "imagine" the suggestions they were given, between one-third and one-half reported the occurrence of vivid auditory and visual hallucinations. Similarly, a number of other

investigators (Anderson & Sarbin, 1964; Hilgard & Tart, 1966; Sarbin & Anderson, 1963; Sarbin & Juhasz, 1967) have shown that subjects, who have received no special preliminary instructions, are only slightly less responsive to motoric and perceptual suggestions than are subjects who have received an hypnotic induction.

Even more problematic for the traditional perspective is another set of recent findings: brief instructions, which encourage subjects to try to the best of their abilities and inform them that the tasks to be performed are easy, enhance subjects' responsiveness to suggestion to the same extent as do traditional hypnotic induction procedures (Barber, 1965a). Several trance-state theorists (Evans, 1968; Hilgard, 1969; Hilgard & Tart, 1966; Schneck, 1969; Wachtel, 1969) have argued that these findings may be the result of susceptible subjects "slipping spontaneously into a trance-state." However, in light of the fact that the trance state cannot be inferred without circularity, this argument would seem unjustifiable.

In addition to demonstrating various inadequacies inherent in the traditional conceptualization of hypnotism, research efforts during the past two decades have also led to the development of a number of nonstate formulations. In general, the nonstate viewpoint stresses the similarity between hypnotic behaviors and other psychological phenomena and argues that hypnotic behavior can be explained in terms of social psychological constructs. More specifically, one way of conceptualizing the hypnotic situation, which has gained much recognition in the past few years, is the cognitive-behavioral approach (Barber, 1969; Barber & Ham 1974;

Barber, Spanos, & Chaves, 1974; Spanos & Barber, 1974). This approach assumes that two interrelated factors underlie the four sets of phenomena traditionally associated with the term hypnotism. These are:

- 1) The willingness of the subject to cooperate with the experimenter; that is, the good hypnotic subject is an individual who views hypnosis as interesting and worthwhile and who desires and expects to experience those things that are suggested.

- 2) A shift from the pragmatic, reality-testing orientation of everyday life to one of involvement in imaginings related to suggestions presented by the experimenter. This involves both carrying out and developing patterns of imaginings consistent with the suggestions and setting aside information about the real world inconsistent with the suggestions.

Thus, this approach likens the responsive hypnotic subject to an individual in a movie or theater audience who experiences the thoughts and emotions the actors are attempting to arouse (Barber, 1972). In both instances, the individual is seen as one who has positive attitudes, motivations, and expectancies toward the communications he is receiving. Given this positive set, both are willing to suspend a critical, reality-testing perspective and become imaginatively involved in the communications.

In this thesis, a number of implications of this nonstate approach toward hypnotism will be considered with respect to the developmental trends in suggestibility.

II

IMAGINATIVE PROCESSES AND THE DEVELOPMENT OF SUGGESTIBILITY

Between the years 1894 and 1940, a number of studies were conducted assessing the relationship between chronological age and responsiveness to the type of suggestions traditionally associated with the word hypnosis. In general, these studies indicated that children are more responsive to suggestion than are adults. For example, Messerschmidt (1933), using a wide battery of tests of both primary and secondary suggestibility demonstrated that there is a peak in suggestibility at the ages of seven to eight and that after the age of twenty suggestibility appears to level off. Reymert and Kohn (1940) confirmed this trend on the basis of results obtained with the heat illusion test. Other investigators who have reported similar findings include Binet (1900), Brawwell (1930), Gilbert (1894), Giroud (1911), Guidi (1908), Papov (1926), Rose (1908), Sherman (1925) and Small (1896).

One difficulty with most of these earlier studies is that they employed varying criteria of suggestibility and were conducted under non-standardized conditions. Recently, however, seven studies (Barber & Calverley, 1963; Cooper & London, 1966, 1971; London, 1965; London & Cooper, 1969; Morgan & Hilgard, 1973; Studat, 1958) have assessed the responses of children and adults to a series of suggestions of the type associated with the word hypnosis under carefully standardized conditions. The results of each of these investigations are highly consistent with the earlier observations in that they demonstrate a clear developmental trend in suggestibility; that is, the same general pattern is repeated in each - a relatively low level of suggestibility for those individuals under six years

of age, a rise to a peak near the ages of nine through eleven, and a progressive decline thereafter. Thus, the effects of age on suggestibility appear to be fairly well established. However, the factors contributing to this rise and fall in suggestibility have not received systematic consideration.

As noted in the preceding section, one way of conceptualizing the hypnotic or suggestion situation is that the subject shifts from the pragmatic, reality-testing orientation of everyday life to an orientation of make-believe. Thus, in this type of setting a premium is placed upon fantasy and imagination (Shor, 1959; Spanos, 1973; Sutcliffe, Perry & Sheehan, 1970). Accordingly, a number of studies (Anderson, 1963; As, 1962; As, O'Hara, & Mungar, 1962; Atkinson, 1971; Barber & Calverley, 1964b; Barber & Glass, 1962; Coe, 1964; Coe & Sarbin, 1966; J. Hilgard, 1970; 1974; Lee Teng, 1965; Sarbin & Lim, 1963; Shor, Orne, & O'Connell, 1962; Spanos & McPeake, in press; Spanos, Valois, Ham & Ham, 1973; Sutcliffe, Perry & Sheehan, 1970; Tellegan & Atkinson, 1974 have considered the relationship between general capacity for imagery or fantasy and suggestibility in adult populations. With a single exception (Barber & Calverley, 1964b) a significant positive relation has been indicated. For instance, Barber and Glass (1962), J. Hilgard (1970), J. Hilgard (1974), Spanos and McPeake (in press), and Tellegan and Atkinson (in press) found that subjects who tended to become imaginatively involved or absorbed in such everyday activities as daydreaming, reading a novel or poetry, watching or acting in dramatic productions, listening to music and the like, tended to be responsive to hypnotic suggestions. Along slightly

different lines, other investigators (Shor, Orne, & O'Connell, 1962; Spanos, Valois, Ham, & Ham, 1973; Sutcliffe, Perry, & Sheehan, 1970) have obtained results indicating that, for certain populations, vividness of imagery is positively correlated with suggestibility.

While a number of studies have attempted to assess the relation of general capacity for imagery and fantasy with suggestibility, only recently has the direct effect of imaginative involvement on responsiveness to suggestion been investigated. Specifically, a series of studies (Spanos, 1971; Spanos & Barber, 1972; Spanos & Ham, 1973) indicated that subjects who experience their responses to suggestions as involuntary occurrences typically engage in a pattern of imagining which has been labeled goal-directed fantasy. When responding to suggestions, these subjects often imagine situations, which if they were actually to occur, would bring about the suggested effect. Thus, subjects who passed the suggestion for arm-heaviness typically reported fantasies such as the following:

I imagined that there were all kinds of rocks tied to my arm. It felt heavy and I could feel it going down. I couldn't stop it. (Spanos, 1971).

Similarly, subjects who passed the arm-levitation suggestion commonly gave testimony such as the following:

I imagined that my arm was hollow and somebody was putting air into it, that my arm was hollow, there was nothing in it, and somebody was putting air into it (Spanos, 1971).

In contrast to this, subjects who did not respond to suggestions usually failed to engage in this pattern of imaginative responding.

Instead, these subjects were either unwilling to cooperate or unable to adopt the attitude of imagining implied by the suggestions.

Additional evidence relating to the importance of imaginative processes comes from studies indicating that; (1) suggestions are more likely to be experienced when they direct the subject to engage in imaginings that are consistent with the aims of the suggestion (Barber & Calverley, 1969; Barber & Hahn, 1962; Chaves & Barber, 1974; Cos, Allan, Krug & Wurzburg, 1974; Evans & Paul, 1970; Johnson, 1973; Spanos & Barber, 1972; Spanos, Barber, & Lang, in press; Spanos & McPeake, 1974), (2) highly suggestible subjects tend to report imaginings that are more elaborate and of longer duration than are those of subjects rated medium or low in suggestibility (Spanos, 1973), and (3) the procedures most effective in increasing the suggestibility of unresponsive subjects consist of training subjects to become involved in specific suggestion-related imaginings and to become involved in specific suggestion-related imaginings and to disattend to competing thoughts and sensory input (Commings, Fullam, & Barber, 1973; Diamond, 1972; Sachs, 1969, 1971; Sachs & Anderson, 1967).

From the above discussion, it is apparent that a major factor determining level of suggestibility is the subject's willingness and ability to engage in circumscribed patterns of imagining. It follows from this that the rise and fall in suggestibility with age may, at least in part, be due to developmental trends in capabilities for imagery and fantasy. More specifically, the progressive decline in suggestibility after ages nine to eleven may be a result of an increased developmental trend toward a rational-logical mode of thinking which is inconsistent with the involvement in imaginative pro-

cesses so important in responsiveness to suggestion.

The available data regarding imaginative behavior exhibited during play and daydreaming appear to be consistent with this hypothesis; that is, they indicate specific developmental trends in the structure and content of imaginative behavior. For example, Piaget's (1962) systematic observations of overt play from birth to puberty led him to conclude that symbolic play (which involved make-believe representation of absent objects) commences at about the end of the first year; that the symbolism in play adheres ever more closely to reality after about the fourth year; and that play eventually becomes less "imaginative," with symbolic constructions less distorting and more nearly related to adopted work. Similarly, Markey (1935), Pitcher and Prelinger (1963), Ames (1966), and Hurlock (1964) found that self-initiated fantasylike play, daydreaming and the capacity for imaginative storytelling begins early in childhood around the second or third year. Also consistent with Piaget's finding are those of other investigators (Lehman & Witty, 1927; Jersild, Markey, & Jersild, 1933; Smith, 1904) indicating a trend toward increasing realism in daydreams and play between the ages of five to twelve.

In addition to observations regarding developmental changes in the structure and content of imaginative behaviors, investigators have also reported belief in the reality of fantasylike activities may also undergo changes with age. Thus, Piaget (1962) commented that:

The two- to four-year-old child does not consider whether

his ludic symbols are real or not. He is aware in a sense that they are not so for others, and makes no serious effort to persuade the adult that they are. But for him, it is a question which does not arise, because symbolic play is direct satisfaction...and has its own kind of belief, which is a subjective reality. In the case of older children, in whose play the symbols are replaced by rules, it is obvious that the effect of social life is to weaken ludic belief (p. 168).

Jersild (1957) and Yarrow (1960) are generally in agreement with Piaget in pointing out that as the child moves toward adolescence, his growing awareness of reality intrudes upon his imaginings and, as a result, he tends to lose the ability to become involved in make-believe so vivid that it seems almost real.

To summarize, suggestibility is low for those under the age of six, rises to a high point near the ages of nine to eleven, and progressively declines thereafter. Responsiveness to suggestion appears to involve the capacity to direct one's imaginings along suggested lines and to temporarily treat these imaginings as real occurrences. Research in free fantasylike activity has indicated that the individual's ability to engage in structured reality-oriented imaginings commences at about the age of three years and increases thereafter. On the other hand, it has also been shown that belief in the reality of these imaginings begins to decline as the child approaches adolescence. The interplay of these two capacities may, in part, account for the developmental trends in suggestibility.

The purpose of the present study is to:

- (1) Determine the relationship between the passing or failing of an ideometer (arm-levitation), a challenge (arm-catalepsy), and an

amnesia suggestion and the presence or absence of goal-directed fantasy in subjects between the ages of eight to seventeen.

(2) Determine changes occurring in the elaborateness and duration of goal-directed fantasy with age and how these changes relate to suggestibility.

It is hypothesized that:

(1) Within each age group, subjects who pass suggestions for arm levitation, arm catalepsy, and selective amnesia will tend to report engaging in goal-directed fantasy, whereas those who do not respond to these suggestions will be less likely to engage in this pattern of imaginative responding.

(2) Within each age group, subjects who pass each of these suggestions will report engaging in goal-directed fantasies that are more elaborate and of longer duration than those of subjects who fail these suggestions.

(3) There will be a curvilinear relationship between the elaborateness and duration of goal-directed fantasy and age.

III

METHODOLOGY

Overall Design

One hundred subjects, (44 males and 56 females), between the ages of 8 and 17 were individually tested in a single session by one experimenter (the author). Each subject was administered standardized task-motivational instructions followed by an arm-levitation suggestion, an arm-catalepsy suggestion, and an amnesia suggestion for the number four. Each subject was interviewed immediately after his response to each suggestion.

Selection of Subjects

After arrangements have been made with school officials and at least one month prior to conducting the experiment, parents of children from participating schools were sent a letter requesting permission for their child to participate in a study investigating the development of imaginative behavior (see Appendix A). From the total number receiving permission to participate, 20 subjects were randomly selected from the following age groups: 8-9, (Group 1); 10-11, (Group 2); 12-13, (Group 3); 14-15, (Group 4); 16-17, (Group 5). None of the subjects were paid for their participation.

Procedure

Preliminary instructions. Immediately upon entering the experimental room, each subject was seated and administered the following instructions orally:

I am interested in what is going on in peoples' minds when they carry out suggestions. I'm interested in what they are

thinking, imagining, picturing, feeling, and saying to themselves while carrying out suggestions. In this experiment, I am going to ask you to carry out some suggestions. After each suggestion, I'll ask you to tell me what was passing through your mind while you were carrying out the suggestion. In giving me your answer, it's very important that you be honest and tell me everything that you were thinking, imagining, picturing, feeling, and saying to yourself -- even if you think it silly or unimportant.

Following this, each subject was asked to describe in his own words the purpose of the experiment. The instructions were repeated and clarified for those who fail to indicate a basic understanding.

Task-motivational instructions. Next the experimenter administered task-motivating instructions. These instructions took approximately 30 seconds to administer and were worded in the following manner:

I am now going to test your ability to imagine and to visualize. It is really quite easy and you will probably find it very interesting. All that is involved in responding to these suggestions is that you relax and let yourself imagine and picture the things I will ask you to imagine. Most people are able to do this very well without any difficulty.

When they try to the best of their ability, they are able to imagine very vividly the things described to them. If you try to imagine to the best of your ability you too can easily imagine and do the interesting things I tell you. All I am asking

for is your cooperation in helping this experiment by trying your best to imagine what I describe to you. Now close your eyes, let your whole body relax and make yourself ready to receive the first suggestion.

Immediately following completion of these instructions, the subject was administered the first of three suggestions.

Administration of suggestions. The first suggestion administered was for arm-levitation. This suggestion, which is similar to that employed by Barber (1969), took approximately 30 seconds to administer and was worded in the following manner:

Hold your right arm straight out in front of you. Imagine that the arm is becoming lighter and lighter, that it's moving up and up. It's weightless and rising in the air. It's lighter and lighter, rising and lifting more and more. It's lighter and lighter and moving up and up. It's moving up and up, more and more. It's lighter and lighter, moving up and up, more and more, higher and higher.

At the end of the 30-second suggestion period the subject was told "You can relax your arm now." Each subject was then questioned concerning his experiences during the suggestion interval. Following this procedure, the subject was administered the following arm-catalepsy suggestion:

Hold your left arm straight out in front of you. Imagine that your arm is in a cast so that the elbow cannot bend. Imagine that the cast makes the arm stiff, rigid, and im-

movable, it keeps the elbow from bending. Your arm cannot bend, it's held tightly by the cast, stiff and rigid, so stiff and rigid that it won't bend no matter how hard you try. It's stiff and rigid, stiff and rigid, held tightly by the cast. The more you try to bend it, the stiffer it will become. You won't be able to bend it until you hear my fingers snap.

The experimenter then waited five seconds and said "Try to bend your arm, you can't." After waiting five more seconds, he snapped his fingers and instructed the subject that he was now able to bend his arm. The subject was then interviewed concerning his experiences. Upon completion of this questioning, a selective amnesia suggestion was administered. This suggestion was taken verbatim from Spanos (1971) and was worded as follows:

I want you to forget the number four. I want you to wipe the number completely from your mind so that you are unable to think of, recall, or remember the number four in any way. The number four will be gone completely from your mind. You'll be unable to think of, recall, or remember this number in any way until I instruct you to remember it.

After waiting 30 seconds, the subject was instructed to count out loud from one to five. After responding to the suggestion, he was again asked a series of questions regarding his experiences.

Semi-structured interviews. Each subject was interviewed on three separate occasions during the course of the experimental session, once after each suggestions. The first four requests for testimony follow-

ing each suggestion were worded in the following manner:

(1) Please tell me honestly what was passing through your mind--what you were thinking about and saying to yourself, imagining and picturing in your head from the time I asked you to (imagine that your arm was rising) until the time I asked you to stop responding to this suggestion. (The phrase in brackets will be replaced with the phrases; imagine a cast on your arm; forget the number four, following the arm-catalepsy and amnesia suggestions, respectively.)

(2) Please tell me more about what you were experiencing during this time. Don't leave anything out. Tell me everything that you can remember.

(3) What were you imagining at this time? What pictures were in your mind?

(4) What were you thinking about and saying to yourself at the time?

Subjects, whose testimony indicated that they engaged in goal-directed fantasy, were also asked:

How long did the image last? During the time that you were responding to this suggestion, did you imagine (brief description of reported imagining) for the entire time, most of the time, half of the time, or only a short part of the time?

The questioning was terminated at this point for those subjects who either clearly did or did not report goal-directed fantasy.

Subjects who did not supply detailed enough information for the experimenter to unambiguously make this judgement were asked questions aimed at clarifying their reports. These questions took the form of asking the subject to describe more fully certain aspects of his experience.

Dependent Variables

The major dependent variables assessed in this study included: (a) subjects' overt response to the arm-levitation, arm-catalepsy, and amnesia suggestions; (b) subjects' testimony for goal-directed fantasy in response to these suggestions; (c) elaborateness of reported goal-directed fantasies; and (d) duration of reported goal-directed fantasies.

Overt response to arm-levitation, arm-catalepsy, and amnesia suggestions.

Subjects were scored as passing the arm-levitation suggestion if they raised their arm four inches or more during the 30-second suggestion period. Subjects were scored as passing the arm-catalepsy suggestion if they failed to noticeably bend their arm at the elbow before the experimenter snapped his fingers. Subjects were scored as passing the amnesia suggestion if they failed to say the number four while counting out loud from one to five.

Assessment of goal-directed fantasy. A scoring manual describing the characteristics of goal-directed fantasy has been developed by Spanos (1971) (see Appendix B). The experimenter used this manual in judging subjects' testimony following each suggestion for the presence or absence of goal-directed fantasy. In order to establish the inter-rater reliability of the experimenter's judgments, a second independent rater post-experimentally judged the tape-recorded

verbal interchanges obtained after the administration of each suggestion. Discordant judgments were resolved by assigning the subject the average of the two ratings.

Assessment of duration. Subjects who indicated that they engaged in goal-directed fantasy were asked to approximate the duration of this experience; that is, they were asked to judge whether the fantasy lasted for the entire time they were responding to the suggestion, for most of the time, for half of the time, or for only a short part of the time. These alternatives were scored 4, 3, 2, and 1, respectively.

Reliability of Goal-Directed Fantasy Ratings and Elaborateness of Suggestion-Related Imaginings Ratings. The two judges rated a total of 300 verbal interchanges for the presence or absence of goal-directed fantasy, and the elaborateness of suggestion-related imaginings. A high level of inter-rater agreement was shown for both. The judges agreed on 292 of their 300 rating choices (97% of the time) that goal-directed fantasy was or was not displayed in subject's testimony ($r_p=0.94$). Similarly, with respect to ratings of level of elaborateness of suggestion-related imaginings displayed in subject's testimony, the judges agreed on 270 of their 300 rating choices (90% of the time) ($r=0.93$).

IV

RESULTS

As noted in the preceeding section, three suggestions were administered to all subjects during the experimental session - an arm-levitation suggestion, and arm-catalepsy suggestion, and a selective amnesia suggestion. Initial inspection of the data from the arm-catalepsy suggestion indicated that it was passed by almost all of the subjects; that is, in none of the five groups did more than three subjects fail to meet the criteria for passing this suggestion. Specifically, the number of subjects failing this suggestion in Groups 1 through 5 was 1, 2, 0, 3, and 3, respectively. This may have been due to the fact that this suggestion, unlike the other two, included an explicit goal-directed fantasy. However, whatever the reason, because of the extremely low rate of failure on this suggestion, analyses considering the relationships of goal-directed fantasy, elaborateness, and duration with responsiveness could not be performed. Therefore, the arm-catalepsy data were not analyzed or included in this report.

Goal-Directed Fantasy and Responsiveness to Suggestion

Table 1 shows the relationship between goal-directed fantasy and subjects' tendencies to pass or fail the arm-levitation suggestion for each age group. Fisher exact probability tests performed on these data clearly indicate that, in each age group, subjects who pass this suggestion tend to report goal-directed fantasy while those who do not pass usually fail to report such fantasy ($p < .005$ for each age group).

TABLE 1

Relationship Between Performance on the Arm-
 Levitation Suggestion and Engagement in Goal-
 Directed Fantasy for Each Age Group

		Goal- Directed Fantasy Present	Goal- Directed Fantasy Absent
	Group 1 (8-9)	6	2
Passed	Group 2 (10-11)	8	3
	Group 3 (12-13)	11	0
Suggestion	Group 4 (14-15)	7	0
	Group 5 (16-17)	8	0
	Group 1 (8-9)	0	12
Failed	Group 2 (10-11)	1	8
	Group 3 (12-13)	2	7
Suggestion	Group 4 (14-15)	1	12
	Group 5 (16-17)	4	8

The relationship between the presence or absence of goal-directed fantasy in subjects' testimony and passing or failing the selective amnesia suggestion is displayed in Table 2. Again, Fisher tests indicate that subjects who pass or fail this suggestion differ in this respect ($p < .05$; $p < .001$; $p < .025$; $p < .05$; and $p < .025$ for Groups 1 through 5, respectively).

TABLE 2

Relationship Between Performance on the Selective
Amnesia Suggestion and Engagement in Goal-Directed
Fantasy for Each Age Group

		Goal- Directed Fantasy Present	Goal- Directed Fantasy Absent
Passed Suggestion	Group 1 (8-9)	7	3
	Group 2 (10-11)	12	0
	Group 3 (12-13)	10	0
	Group 4 (14-15)	9	0
	Group 5 (16-17)	6	0
Failed Suggestion	Group 1 (8-9)	2	8
	Group 2 (10-11)	1	7
	Group 3 (12-13)	5	5
	Group 4 (14-15)	6	5
	Group 5 (16-17)	5	9

The testimony of subjects who passed these two suggestions was remarkably uniform. With the exception of 5 subjects on the arm-levitation suggestion and 3 on the selective amnesia suggestion, these subjects reported visually imagining situations which, if they were actually to occur, would lead them to experience the suggested effects. For example, one subject who passed the arm-levitation suggestion provided the following fantasy report:

I felt like I was some kind of leaf and the tree just threw me off. At first I felt really heavy. Then all of a sudden a big gust of wind just threw me up off the ground and I just started spinning and spinning and I couldn't stop going up. ...I could see trees, big, big, big trees and all the other leaves were watching me. Like I was the only one and I kept going up and up. Then when you said to let it (my arm) drop, the wind died and I fell. It was like it was as high as I could go and that was all. I just crushed and fell to the ground.

The testimony of other subjects who passed this suggestion included references to their arms being hollow, changing into wings, or being attached to kites and balloons. Along similar lines, the most frequent report of subjects who passed the selective amnesia suggestion was that they imagined a number line with either the 4 initially missing or disappearing by various means (e.g., fading out, erased, crossed out, walking away).

In contrast to the reports of subjects who passed these suggestions, the testimony of those who failed was rather varied. In a few instances, subjects indicated that they were not motivated to cooperate. For the most part, however, their testimony showed that they were well motivated but unable to devise a strategy that would lead them to successfully experience the suggested effects. The following report is characteristic:

S: I was like saying to myself "I hope I don't remember the number four until the person (experimenter) instructs me to" and I just kept saying "I hope I don't remember that number." But no matter how hard I tried I couldn't forget.

E: How did you go about trying to forget?

S: Just by saying in my head "1,2,3,5...1,2,3,5..." over and over again.

E: And did this work?

S: No, all I could see was this big number 4 coming at me. I couldn't knock out the 4.

As shown in Tables 1 and 2, eight subjects engaged in goal-directed fantasy but failed the arm-levitation suggestion and 19 engaged in such fantasy but failed the selective amnesia suggestion. On the whole, the testimony of these subjects was like that of those who passed the suggestion with one important exception -- most were unable to maintain their fantasy throughout the entire time in which they were responding to the suggestion. The report of the following subject who failed the arm-levitation

suggestion is illustrative:

"I pictured a stage with purple velvet curtains at a school I used to go to. I could see an audience and a magician and he was levitating my whole body, not just my arm. I could see myself sitting on a bench and I was being lifted. I started to move just a tiny bit and then it (the picture) just stopped. That's when I noticed that there was no sensation of my arm getting any lighter, as a matter of fact, it was getting to feel numb and heavier. Everything contradicted itself."

Similarly, in all but three instances, subjects who failed the selective amnesia suggestion but reported engaging in goal-directed fantasy indicated that at some point during the suggestion the number four reappeared in their fantasy.

As noted earlier, a small proportion of subjects passed each of the suggestions without engaging in goal-directed fantasy. Examination of this testimony did not indicate that specifiable alternative strategy had been employed. Instead, these subjects generally indicated that they had simply overtly complied without actually experiencing the suggested effects.

Elaborateness and Duration of Fantasy and Responsiveness to Suggestion

Subjects testimony following each suggestion was rated for elaborateness of fantasy according to the criteria described in

Appendix B. Mann-Whitney U tests were performed on these data to determine whether the fantasy reports of subjects who passed each suggestion differed in this respect from those who failed. Table 3 summarizes these analyses for the arm-levitation and selective amnesia suggestions by age group. As shown in this table, each of these analyses proved significant; that is, for all ages, subjects who passed either the arm-levitation suggestion or the selective amnesia suggestion were found to engage in more elaborate fantasy than those who failed to pass these suggestions.

TABLE 3

Summary of Mann-Whitney U Tests Comparing the
Elaborateness of Fantasy Reports Provided by
Subjects Who Passed the Arm-Levitation and Se-
lective Amnesia Suggestions With that of
Subjects Who Failed

Age Groups	Sum of Ranks for Subjects who Passed	Sum of Ranks for Subjects who Failed	U	p
ARM-LEVITATION SUGGESTION				
1 (8-9)	120.0	90.0	12.0	.01
2 (10-11)	149.5	60.5	15.5	.01
3 (12-13)	146.0	64.0	19.0	.025
4 (14-15)	116.5	93.5	2.5	.001
5 (16-17)	116.0	94.0	16.0	.01
SELECTIVE AMNESIA SUGGESTION				
1 (8-9)	129.0	81.0	26.0	.05
2 (10-11)	165.5	44.5	8.5	.001
3 (12-13)	137.0	73.0	18.0	.01
4 (14-15)	130.0	80.0	14.0	.01
5 (16-17)	95.0	115.0	10.0	.01

To provide some appreciation for the differences which exist in subjects, testimony along this dimension, the following are excerpts from reports gathered after administration of the selective amnesia suggestion. These reports were scored 0, 1, 2, and 3, respectively.

Subject # 1: I tried to forget the number 4. I kept saying to myself, "Forget the number 4, there's no such thing as number 4, it doesn't exist." But all I could think of was 4 - 4 - 4.... I kept seeing this big number 4. That's all I could picture and I couldn't get rid of it.

Subject # 2: When you first said that there was no 4, I could see a whole mess of sticks. There was one set with one stick, another set with two sticks, a set with three sticks, and a set with five sticks. I was just picturing that when you said to count 1 to 5.

Subject # 3: At first I was picturing everything black except for a number line that went 1,2,3,4,5 all the way up to 10. Then the number 4 went away, it kinda faded out so I couldn't see it anymore and the 3 and the 5 moved together so it would say 1,2,3, 5,6 and so on. Then I was just counting to myself "1,2,3,5,6...."

Subject # 4: I was imagining a whole group of numbers in this playground with swings and everything.

The little numbers were chasing one another around and some were sitting around having a cigarette. I saw the 4 walking down this road, just going and going like nobody wanted it. He just kept walking until I couldn't see him anymore. Just the road and the dark banks of sand on the side. I was wondering why they didn't want him. He just kept walking. He had a little knapsack and the corners of him were hung down like he was really sad. He just kept walking and walking and getting smaller and smaller until he was gone.

Additional examples of testimony associated with each elaborateness rating for this and the arm-levitation suggestion may be found in Appendix C.

After responding to questions regarding the content of their fantasy experience, subjects were asked to judge the duration of this response. These data were also analyzed by Mann-Whitney U tests. A summary of this analysis may be found in Table 4. As indicated in this table, for all ages, subjects who passed the arm-levitation and/or the selective amnesia suggestion reported fantasies of longer duration than those who failed.

TABLE 4

Summary of Mann-Whitney U Tests Comparing the Duration
of Fantasy Reports Provided by Subjects Who Passed the
Arm-Levitation and Selective Amnesia Suggestions With
That of Subjects Who Failed

Age Groups	Sum of Ranks for Subjects who Passed	Sum of Ranks for Subjects who Failed	U	p
ARM-LEVITATION SUGGESTION				
1 (8-9)	120.0	90.0	12.0	.01
2 (10-11)	150.0	60.0	15.0	.01
3 (12-13)	152.0	58.0	13.0	.01
4 (14-15)	118.0	92.0	1.0	.001
5 (16-17)	122.5	87.5	9.5	.01
SELECTIVE AMNESIA SUGGESTION				
1 (8-9)	132.0	78.0	23.0	.025
2 (10-11)	169.0	41.0	5.0	.001
3 (12-13)	134.0	76.0	21.0	.025
4 (14-15)	123.0	87.0	21.0	.025
5 (16-17)	103.5	106.5	1.5	.001

Elaborateness and Duration of Fantasy and Age¹

TABLE 5
Mean Elaborateness and Duration Scores

Age Groups	Mean Elaborateness Scores	Mean Duration Scores
ARM-LEVITATION SUGGESTION		
1 (8-9)	0.40	0.80
2 (10-11)	0.80	1.30
3 (12-13)	0.90	1.80
4 (14-15)	0.50	0.85
5 (16-17)	0.75	1.35
SELECTIVE AMNESIA SUGGESTION		
1 (8-9)	0.80	1.10
2 (10-11)	1.65	2.00
3 (12-13)	1.40	2.00
4 (14-15)	1.25	1.80
5 (16-17)	0.80	1.10

¹ A parametric statistic has been employed to test the hypothesis regarding the relationship between elaborateness and duration of fantasy and age. The reason for this is that no nonparametric statistic is available for determining whether the relationship between two variables is curvilinear. While the variables of elaborateness and duration are, in all probability, measured in a subinterval type scale, papers by Gaito (1959, 1960) and others (Boneau, 1961; Kempthorne, 1955; Lord, 1953) strongly suggest that probability statements derived from the application of parametric statistical tests are little affected by the choice of a scale of measurement for analysis.

Mean Elaborateness and duration scores for each age group on the arm-levitation and selective amnesia suggestions are reported in Table 5, and shown graphically in Figure 1. As indicated, both the elaborateness and duration of fantasy in response to the arm-levitation suggestion are lowest at the ages of 8 to 9, rise to a peak at the ages of 12 to 13, and decline thereafter. A similar age trend is shown for elaborateness and duration of fantasy in response to the selective amnesia suggestion. It should be noted, however, that the peak occurs at a somewhat earlier age, around the years of 10 to 11.

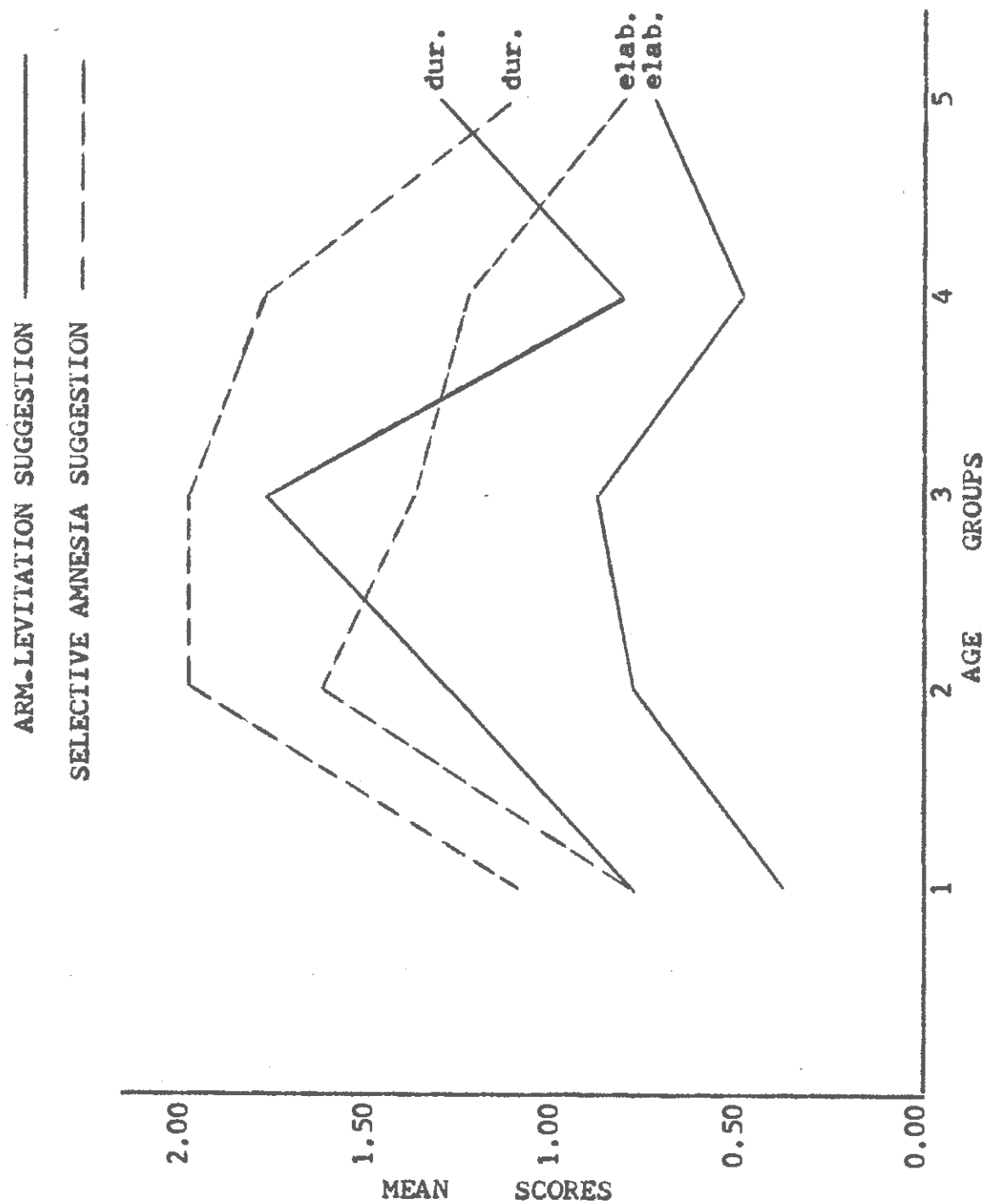


Fig. 1. Mean Elaborateness and Duration Scores Across Age Groups

Correlation ratios were computed to determine whether there was a significant curvilinear relationship between these dimensions of fantasy response and age. These analyses indicated that only one of the relationships was significant. A significant positive relationship was found between the elaborateness of fantasy in response to the selective amnesia suggestion and age ($r=.31$, $F=2.61$, $df=4,95$, $p<.05$). Moreover, this relationship was found to be significantly nonlinear ($F=2.76$, $df=3,95$, $p<.05$). The remaining relationships, while in the same direction, were indicated to be nonsignificant; that is, there is a positive but nonsignificant relationship between a) both elaborateness and duration of fantasy response to the arm-levitation suggestion and age ($r=.27$, $F=1.90$, $df=4,95$, $p<.13$), and b) duration of fantasy in response to the selective amnesia suggestion and age ($r=.28$, $F=2.14$, $df=4,95$, $p<.10$).

V

DISCUSSION

Hypothesis # 1: Within each age group, subjects who pass each of the suggestions will tend to report engaging in goal-directed fantasy, whereas those who do not respond will be less likely to engage in this pattern of imaginative responding.

Before preceeding to the discussion of results relating to this hypothesis, it would appear to be worthwhile to briefly reconsider the findings from which it was drawn.

In general, studies focusing on the relationship between goal-directed fantasy and the tendency to pass suggestions traditionally associated with the term hypnosis have been conducted along two lines.

The first approach has consisted of assessing the relationship between engaging in spontaneously devised fantasy and the tendency to pass or fail suggestions. In his first study, Spanos (1971) demonstrated that subjects who pass several types of suggestions tend to report goal-directed fantasy and that those who fail them do not report such strategy. Since then, a number of other studies have replicated this relation (Barber & Spanos, 1972; Buckner, 1974; Spanos, 1973; Spanos & Ham, 1973; Spanos, Spillane & McPeake, 1974).

In contrast, the second investigative approach has entailed the comparison of the extent to which an explicit strategy for imagining is provided by a suggestion and subjects' responsiveness. For example, Coe, et al. (1974) counted the number of specific words and modifiers in a series of suggestions that would lead

subjects to engage in goal-directed fantasy. They found a direct relationship between the degree to which a suggestion contains such material, and subjects' tendency to report goal-directed fantasy and successfully respond to the suggestion. Other studies have directly manipulated the presence or absence of an explicit goal-directed fantasy in suggestions for arm-levitation, arm-catalepsy, amnesia, and analgesia (Chaves & Barber, 1974; Spanos & Barber, 1972; Spanos, Horton, & Chaves, in press; Spanos, Spillane, & McPeake, 1974). In each the same conclusion was reached: suggestions which provide task-relevant fantasy are more readily experienced than suggestions that do not provide such fantasy.

Thus, several studies employing different methods and suggestions under various conditions (i.e., both hypnotic and non-hypnotic) have consistently shown that goal-directed fantasy functions as a cognitive strategy enhancing response to suggestion. However, this research, like most psychological research, has tested subjects drawn from a rather restricted population - students between the ages of 18 and 21. One purpose of the present study was to determine whether these findings could be extended to subjects from lower age levels (i.e., subjects between the ages of 8 and 17).

As predicted, irrespective of age, subjects who responded successfully to the arm-levitation and/or selective amnesia suggestion typically reported spontaneously devising and carrying out a goal-directed fantasy, whereas those who failed to respond usually

reported engaging in some other pattern of activity. Of equal importance, the content of subjects' testimony was remarkably similar to that reported in previous investigations. For example, Spanos and his associates (Spanos, 1971, 1973; Spanos & Ham, 1973; Spanos, Spillane, & McPeake, 1974) found that subjects exhibited amnesia for a nursery rhyme or the number four when they failed to visualize this material while attempting to recite or count. In the present study, this type of strategy was also employed by almost all of the subjects who passed the selective amnesia suggestion. Similarly, this investigator and others have found the failing of a suggestion to be associated with either a) a lack of motivation to cooperate, b) the inability to adopt a make-believe orientation, or c) the inability to maintain a task-relevant fantasy. Thus, it seems reasonable to conclude that across a considerable age range, engaging in and maintaining a goal-directed fantasy facilitates response to a variety of suggestions.

Hypothesis # 2: Within each age group, subjects who pass each suggestion will report engaging in goal-directed fantasies that are more elaborate and of longer duration than those of subjects who fail the suggestions.

While it is clear that merely engaging in goal-directed fantasy enhances responsiveness, a number of theorists have suggested that the extent to which subjects become absorbed or involved in such fantasy may also be an important variable in determining response to suggestion. Thus, Sarbin and Coe (1972) have proposed

the likelihood of responding successfully to the suggestion, b) the extent to which the response is experienced as an involuntary occurrence, c) the degree to which the imaginings are defined as real events, and d) the likelihood of passing more difficult suggestions. These findings are complimented by those of As (1962), J. Hilgard (1970), and Tellegan and Atkinson (1974), indicating that hypnotic susceptibility may be predicted from degree of imaginative involvement in activities outside the hypnotic situation.

Two aspects of involvement in suggestion-related imaginings, as conceptualized by Spanos and Barber (1974), were assessed in the present study-elaborateness and duration of fantasy. As predicted, findings regarding the relation between imaginative involvement and response to suggestion were replicated and extended to subjects from lower age levels. Irrespective of age, subjects who passed suggestions for arm-levitation and selective amnesia reported fantasies that were significantly more elaborate and of longer duration than those of subjects who failed these suggestions. This finding is reinforced by two additional aspects of the data. First, as noted earlier in the discussion, subjects who failed to successfully respond but reported engaging in goal-directed fantasy indicated, for the most part, that they were unable to ignore contradictory information and maintain their fantasy. Second, Spanos, Spillane, and McPeake (1974) demonstrated that when subjects are provided with goal-directed fantasy as a strategy, they tend to become more involved

in responding to the suggestion and are more likely to experience the suggested effects than are subjects not provided with a strategy. In the present study, data from the arm-catalepsy suggestion could not be analyzed because almost all of the subjects passed it. This suggestion, unlike the other two, provided an explicit goal-directed fantasy as a strategy. Taken together, there seems to be strong support for the notion that involvement in suggestion-related imaginings is an important factor in determining response to suggestion at all age levels.

Hypothesis # 3: There is a curvilinear relationship between the elaborateness and duration of goal-directed fantasy and age.

As will be recalled from an earlier section in this report, studies have repeatedly shown suggestibility to rise to a peak during early adolescence and to decline thereafter. Recently, J. Hilgard (1970) proposed an explanation for this developmental trend based on the concept of imaginative involvement. Specifically, she has suggested that:

"...The conditions of increasing rational sophistication and the needs for competency and achievement bring with them a decline in wonderment; these changes with age somehow counteract the imaginative involvements so important in hypnosis and substitute for them interactions on a reality level that makes hypnosis increasingly difficult" (p. 189).

While the developmental literature relating to free fantasylike activity indicates that J. Hilgard's hypothesis is plausible, prior to this investigation, no direct test had been attempted.

The prediction regarding the relationship between involvement in suggestion-related imaginings and age received only partial support in the present study. Age trends in elaborateness and duration of fantasy in response to both the arm-levitation and selective amnesia suggestion were consistent with those reported for responsiveness to suggestion; that is, these scores were characteristically low for the youngest subjects, rose to a peak around the ages of 10 to 12, and declined thereafter. However, correlational analysis indicated that only for elaborateness of fantasy in response to the selective amnesia suggestion was there a significant curvilinear relation with age. The remaining relationships, while in the same direction, did not achieve conventional levels of significance. Thus, no definitive statement can be made regarding developmental trends in imaginative involvement and its relation to changes in responsiveness. However, further research along these lines does seem to be warranted in light of the internal consistency of the data and the fact that elaborateness and duration measures reached their peak within the same age range previously demonstrated for response to suggestion. Two considerations which may prove to be of value in this work include:

- 1) Examining variations across one-year rather than two-year age groups. Previous studies have demonstrated significant changes in suggestibility using multiple-year age groups. However,

it appears that this technique may have the effect of masking real and significant differences between ages within these groups.

2) Employing a larger battery of test suggestions. Studies examining developmental trends in suggestibility have typically employed 8- to 12-item scales and report changes in terms of total scale scores. It is therefore possible that findings of differences across ages reflect variations in only a few, rather than all, suggestions.

VI

APPENDICES

APPENDIX A

Form Letter Requesting Participation

Dear Parent:

I am Martin Ham, a graduate student in psychology at the University of Rhode Island. Currently, I am conducting a Master's thesis study which is concerned with the development of imaginative behavior. In order to complete this work, it is necessary for me to test a fairly large number of individuals between the ages of eight to seventeen. I would very much appreciate it if you would permit your son or daughter to take part in this study. Testing will take place at the school during regular school hours and will only require approximately twenty minutes. During this time, your son or daughter will be asked no personal questions and all findings will remain confidential. By signing the attached permission slip, you will allow me to place your son or daughter's name into a pool along with those others who have received permission. From this pool the necessary number of individuals will be selected at random. Please return the consent slip to the Main Office.

Thank you for your time and consideration.

I heraby give my consent for _____
to participate in a study conducted by Martin Ham at _____
_____(name of school).

Date of Birth _____ Parent _____

Study Periods _____ Date _____

TESTING WILL BE DONE IN THE CONFERENCE ROOM IN THE MAIN OFFICE.

Appendix B

Manual for Scoring Goal-Directed Fantasy²

The purpose of this manual is to teach individuals to score the verbal testimony of subjects administered test suggestions for the presence of goal-directed fantasy. As raters you will be presented with the verbal transactions of an experimenter and his subjects, and you will be asked to indicate whether or not the transaction indicates that the subject engaged in a pattern of activity labeled goal-directed fantasy. The experimenter-subject transactions you will be asked to rate were gathered in a study which possessed the following characteristics. (a) Subjects were administered ideo-motor suggestions, challenge suggestions, and an amnesia suggestion. (b) After they had responded to each suggestion, subjects were asked to report what had been passing through their minds while they had been responding to the suggestion. (c) After the subject reported what had been passing through his mind the experimenter often asked him to elaborate on his answers.

As raters you will be presented with separate pieces of paper one piece at a time. Each piece of paper contains the verbal transaction which occurred between the experimenter and a subject after the subject had responded to a single test suggestion. Thus each piece of paper contains a subject's verbal response to the experimenter's request that he (the subject) report what was passing through his

²This manual was constructed by Dr. N.P. Spanos of the Medfield Foundation and has been included verbatim in this report with his knowledge and permission.

mind while he was responding to the test suggestion. Each piece of paper also contains all further questions asked by the experimenter about the subject's response to the particular suggestion, and all of the subject's verbal responses to these questions by the experimenter. Each piece of paper is to be rated separately for the presence or absence of goal-directed fantasy.

Defining Characteristics of Goal-Directed Fantasy

A subject is to be judged as having engaged in goal-directed fantasy if the verbal transaction between experimenter and subject indicates that the subject created in fantasy or imagination a situation which, if it were to occur in the "objective" world, would be expected by the subject to produce the behavior called for by the test suggestion. For example, if a heavy brick were to be placed on top of a subject's outstretched arm, the arm would feel heavy and would be lowered by the weight of the brick. Thus, a subject administered a test suggestion of arm lowering would be scored as engaging in goal-directed fantasy if he stated that, while responding to the suggestion, he imagined that a heavy brick had been placed on his arm. However, a subject who stated that he lowered his arm simply because it became heavy, and further indicated that it became heavy simply because it was outstretched, would not be scored as having engaged in goal-directed fantasy. The latter subject simply reported what was objectively true; that is, an outstretched arm will become heavy if it remains outstretched. The subject did not construct in fantasy a situation which, if it were "real" would lead to his arm becoming heavy.

The following experimenter-subject transaction is one indicating that the subject employed goal-directed fantasy. A subject administered the suggestion that he would be unable to stand up from his chair reports:

- S. There were ropes tying me to the chair so I couldn't stand.
- E. Could you see the ropes, in your mind I mean?
- S. No, I couldn't see them really, it was more like I could feel them. I felt like I was tied.
- E. You didn't have a mental picture of yourself being tied to the chair?
- S. It wasn't a picture exactly. I knew there were the ropes, I could feel them pressing against me when I tried to move, but I don't think I had any pictures.

The above excerpt is scored as evidencing goal-directed fantasy despite the fact that the subject denied engaging in visual imagery. It is important for the rater not to identify the terms fantasy and imagination with visual imagery. Fantasy can occur in the absence of visual imagery. The above example is scored as indicating goal-directed fantasy because the subject gave evidence of having constructed in imagination (but in this case without the use of visual imagery) a situation which, if it were to really occur, would prevent him from standing up.

The rater must keep in mind that the subject may engage in fantasy that is not goal-directed. Such responses are scored as not exhibiting goal-directed fantasy. The following is an example of

fantasy which is not goal-directed. A subject administered the suggestion that his outstretched arms would move apart reports:

S. I could imagine my arms, and then I just saw them begin to move apart.

E. You saw them?

S. In my mind, I saw them, they just started to move.

E. Did you imagine anything else, anything in relation to your arms moving?

S. No, nothing else.

E. Just your arms moving?

S. Yes.

The above transaction is scored as not indicating goal-directed fantasy because the subject did not create an imaginary situation which, if it were real, would cause his arms to move apart. Had the subject stated that he imagined a force acting on his hands to move them apart then, the transaction would have indicated goal-directed fantasy.

It is important to point out that goal-directed fantasy need not involve imaginary situations which actually could occur or which necessarily have a high probability of occurring in the real world. Instead, the imaginary situations must be such that if, for some reason it were to occur in the objective world, it would be expected to lead to the behavior called for by the test suggestion. The following is an example of goal-directed fantasy which could not occur in the objective world. However, if the objective world were

to somehow change so that the events to be described did occur, then the behavior implied by the following test suggestion would be expected. A subject told that he would be unable to bend his outstretched arm reports:

- S. I could see my arm clearly in my mind. I was holding it out straight, but it got strange and started to change.
- E. How did it start to change?
- S. Well, its funny, but it became steel, like my arm turned into steel.
- E. Could you imagine it clearly?
- S. I could see it, it was steel, a long piece of steel, my arm became steel.

The above described set of events obviously could not occur in the real world. That is, in the objective world, one's arm never turns into a piece of steel. Nonetheless, responses such as the one above are scored as exhibiting goal-directed fantasy because the situation described, if it were for some reason (however far-fetched) to occur, would be expected to lead to the behavior implied by the test suggestion.

It is important for the rater to realize that reports of goal-directed fantasy may constitute only a part of the response emitted by the subject. The subject may also state a great deal more which is unrelated to the presence or absence of goal-directed fantasy. In such cases the transaction should be rated as indicating goal-directed fantasy despite the fact that the subject's response consists of other components as well. The following is an example

of a transaction which includes not only goal-directed fantasy but other responses as well. A subject told that he would be unable to stand up from his chair reports:

S. When you first told me I couldn't stand up I wasn't sure whether I could or not. I sort of tried to tell myself that I couldn't stand.

E. What was passing through your mind at the time?

S. That I wanted to please you, and that I knew that I wasn't supposed to stand up.

E. Were you imagining or picturing anything?

S. Yes. I could see myself tied to the chair with heavy chains. This kept me from standing up.

The above transaction would be scored as indicating goal-directed fantasy regardless of the fact that there were other important components to the response.

Occasionally, subjects will engage in goal-directed fantasy, then shift from this fantasy frame of reference to an objective frame of reference and, then, while operating from the objective frame of reference deny the reality of their fantasy. Such responses should be scored as exhibiting goal-directed fantasy and should be distinguished from fantasy that is not goal-directed. The following is an example of goal-directed fantasy which the subject himself negates while operating from an "objective" perspective. A subject told he would be unable to stand up from his chair reports:

S. I could see myself tied tightly to the chair.

E. Then why did you get up?

S. Well, I knew it was all in my imagination, when it came time to get up I knew I wasn't really stuck.

The above subject engaged in goal-directed fantasy and should be scored as having done so despite the fact that he also gave evidence of having changed his perspective to a framework which negated the reality of his fantasy. This type of response should be distinguished from the response of a subject who maintains a fantasy that is not goal-directed (e.g., I imagined my arms moving apart). The former subject should be scored as having engaged in goal-directed fantasy, the latter should not.

Occasionally subjects responding to challenge suggestions initially exhibit a goal-directed fantasy but then change the contents of their fantasy to an imaginary situation which is no longer goal-directed. For example, a subject told that he is stuck to his chair responds:

S. I was tied to the chair, there were ropes around my body.

E. Could you see the ropes clearly?

S. Very clearly.

E. Why did you stand up?

S. When I tried to stand they broke and I was able to get up.

Subjects who respond in this way should be scored as exhibiting goal-directed fantasy despite the fact that the contents of their fantasy changed.

The response of a subject who engages in goal-directed fantasy should also be distinguished from the response of a subject who fails in an attempt to engage in goal-directed fantasy. For example, a subject told that he would be unable to stand from his chair reports:

S. I tried to think that I was tied to the chair, but I just couldn't do it. It's impossible to imagine that.

The above subject should be scored as not having engaged in goal-directed fantasy despite the fact that he presumably made some attempt to engage in such a response.

Thus far we have dealt with the characteristics of goal-directed fantasy given in response to ideo-motor and challenge suggestions. Subjects were also asked to forget the number 4. Subjects passed this suggestion if they counted from 1 to 5 without saying 4. Subjects should be scored as engaging in goal-directed fantasy in response to the amnesia suggestion if they report the occurrence of a set of fantasy events which effectively eliminate their thoughts, and images of the number 4. The following is an example of goal-directed fantasy given by a subject told to forget the number 4.

S. When you asked me to forget the number 4, at first I didn't know what to do. I just kept thinking of 4.

E. What did you do?

S. Well I pictured the numbers, you know, in my mind, and then this bowl came along and it covered the number 4.

E. Why didn't you say the number 4?

S. Because it wasn't there.

Another example of goal-directed fantasy in response to the amnesia suggestion is seen below.

S. Well, I pictured this clock in my mind, with all of the numbers around in a circle, but the four wasn't there.

E. Where was it?

S. I don't know. There was just this space where the 4 should be.

As with fantasy responses to ideo-motor and challenge suggestions, all fantasy responses to the amnesia suggestions need not constitute goal-directed fantasy. The following represents a fantasy response to the amnesia suggestions that is not goal-directed.

S. I pictured each of the numbers on a wooden block, and then I saw the 4 block fade into the background.

E. Then why did you say 4?

S. I don't know, I guess I could still remember it.

E. Did you try to forget the 4?

S. Yes, I tried, but the 4 block never faded away completely, I could always see it, even though it was dimmer than the others.

The following is also an example of a response to the amnesia suggestion which does not involve goal-directed fantasy.

E. What was passing through your mind when I suggested you forget the number 4?

S. Well, I counted the numbers 1 through 5 and skipped saying the 4, in my mind that is.

E. When I asked you to count out loud, why did you say 4?

S. Because I didn't really forget it. When I skipped 4 I knew I hadn't forgotten it.

The above response should be scored as not exhibiting goal-directed fantasy because it indicates that the subject was aware of the number 4 but simply skipped saying it while counting to himself. He created a situation which led to skipping but remembering the number 4. He did not create in imagination a situation which effectively eliminated the number 4.

IF THE RATER HAS ANY QUESTIONS HE SHOULD ASK THEM NOW.

Instructions

The contents of each item with which you will be presented is to be judged for the presence or absence of goal-directed fantasy. You are to judge the contents of each item, one item at a time. Do not let the judgments made in any one case influence any future judgments. When you receive the item you are to judge read it carefully several times keeping in mind the criteria for goal-directed fantasy outlined in the manual. You may refer to the manual for clarification at any time and should do so whenever necessary. You are to make only a single dicotomous rating for each item. That is, in each case you are to judge whether or not the subject engaged in goal-directed fantasy. Rate each item in the order presented to you. Do not skip rating any item. If you find an item particularly difficult to rate even after referring back to the manual, make the best judgment you can, but do not skip the item. You will judge 28 items. The items are numbered 1 through 28. You will be presented with a rating sheet also numbered 1 through 28. The numbers on the rating sheet correspond to the numbers on the items. Do not mark the items themselves, instead, make each rating on the rating sheet.

Appendix C

Manual for Scoring Elaborateness of Suggestion-Related Imaginings

This manual is designed to teach individuals how to rate the elaborateness of subjects' testimony for goal-directed fantasy in response to suggestions. As raters, you will first listen to tape-recorded verbal interchanges between an experimenter and a subject. These interchanges were obtained in a study in which subjects were administered three types of suggestions--an ideomotor suggestion, a challenge suggestion, and an amnesia suggestion. Immediately after responding to each of these suggestions, subjects were asked to describe the pictures, images, and thoughts they experienced while responding to the suggestion. After carefully listening to this testimony, it is your task to indicate the elaborateness of each reported pattern of imagining by assigning a score of either 0, 1, 2, or 3. In so doing, it is assumed that you have a clear understanding of the characteristics of goal-directed fantasy as described in the Manual for Scoring Goal-Directed Fantasy (Spanos, 1971). If this is not the case, please consult this manual before reading further.

Criteria for Rating First Verbal Interchange

The first suggestion administered to each subject was for arm-levitation and was worded in the following manner:

Hold your right arm straight out in front of you. Imagine that the arm is becoming lighter and lighter, that it's moving up and up. It's weightless and rising in the air. It's lighter and lighter, rising and lifting more and more. It's lighter

and lighter and moving up and up. It's moving up and up, more and more. It's lighter and lighter, moving up and up, more and more, higher and higher.

Following his response to this suggestion, the subject was asked to describe what he had experienced.

Assignment of a rating of "0." This testimony should be given a rating of "0" if the subject does not indicate that he engaged in goal-directed fantasy; that is, if the subject fails to report imagining a situation which, if it were actually to occur, would produce the arm-levitation response. Thus, a subject should be assigned a score of "0" if his testimony includes statements such as (a) I didn't raise my arm because I didn't want to, and (b) My arm didn't feel light but I raised it because I wanted to cooperate and help out the experiment. This does not mean, however, that only those subjects who fail to engage in fantasy should receive a score of "0." A subject may engage in fantasy that is not goal-directed. Such a response should also be scored as "0." The following is an example of this type of fantasy report:

- S. I imagined my arm and I saw it beginning to rise.
 E. You saw your arm?
 S. Yes, I saw it in my mind. It was moving up very slowly.
 E. Did you picture anything else?
 S. No

Assignment of a rating of "1." A rating of "1" should be assigned if the subject indicates in his testimony that he employed a basic

cognitive strategy that enabled him to experience the suggested effect; that is, the subject reports imagining a specific situation, which, if it were actually to occur, would cause his arm to rise. Thus, testimony such as the following should be scored as "1."

I pictured these balloons, helium filled balloons, they were tied to my wrist. I tried to hold my arm down but I couldn't.

The balloons just kept pulling my arm up higher and higher.

Similarly, a rating of "1" should also be assigned to reports such as:

I imagined that my arm was hollow and somebody was putting air into it, that my arm was hollow, there was nothing in it and somebody was putting air into it.

Assignment of a rating of "2." It is important to note, that while the fantasy reports scored as "1" include a basic strategy for experiencing the suggested effect, the strategy is carried out in isolation; that is, it is not placed within a broader and more elaborate imagined context. If a subject's testimony includes a basic strategy carried out within an elaborate imagined context, a score of "2" should be assigned; that is, if the subject reports a strategy in an elaborated context which goes beyond that necessary for simply experiencing the suggested effect. Accordingly, the following subject-experimenter transaction would receive a rating of "2."

S. My hand felt really strange. It was like it was a balloon, the kind you fill with helium.

E. Tell me more.

S. My hand felt really light and it began to float up into the air. It just kept floating up higher and higher until it lifted me off the ground.

E. Anything else?

S. I imagined myself being pulled up into the air by my hand. I could see large white clouds all around me and when I looked down, the people and buildings looked very small, like I was up really high.

Criteria for Rating Second Verbal Interchange

The second suggestion that was administered to each subject was the following arm-catalepsy suggestion:

Hold your left arm straight out in front of you. Imagine that your arm is in a cast so that the elbow cannot bend. Imagine that the cast makes the arm stiff, rigid, and immovable, it keeps the elbow from bending. Your arm cannot bend, it's held tightly by the cast, stiff and rigid, so stiff and rigid that it won't bend no matter how hard you try. It's stiff and rigid, stiff and rigid, held tightly by the cast. The more you try to bend it, the stiffer it will become.

You won't be able to bend it until you hear my fingers snap.

Again, the subject was asked to describe the pictures, images, and thoughts he experienced while responding to the suggestion.

Assignment of a rating of "0." As before, the subject whose testimony indicates that he either did not engage in fantasy activity or

engaged in fantasy that was not goal-directed should be assigned a score of "0." Thus, transactions should be rated as "0" if they include statements such as (a) I didn't try to bend my arm; (b) I didn't imagine anything, I just concentrated on keeping my arm as stiff and rigid as possible; or (c) All I imagined as my arm and it felt very very stiff--Nothing else.

Assignment of a rating of "1." Unlike the arm-levitation suggestion, the suggestion for arm-catalepsy presents the subject with a specific technique or strategy that will enable him to experience the suggested effect; that is, the suggestion asks the subject to imagine a specific situation (a cast on his arm) which, if it were the actual state of affairs, would prevent him from bending his arm. If a subject's testimony indicates that he employed the cognitive strategy provided by the suggestion but failed to elaborate on it, a score of "1" should be assigned. The following experimenter-subject transaction is one meeting these criteria:

- S. I imagined my arm straight out in front of me and my arm was wrapped in a cast.
- E. Can you tell me more?
- S. My arm felt like it was in this cast. It felt stiff and rigid like I couldn't bend it.
- E. What were you imagining?
- S. Just the cast on my arm and how I wouldn't be able to bend it.
- E. Anything else?
- S. No, nothing else.

This interchange is rated as "1" because the subject employed the strategy presented by the suggestion but did not add anything to it.

Assignment of a rating of "2." Two types of fantasy reports should receive a rating of "2." The first is one in which the subject indicates that he employed the strategy presented by the suggestion and expanded on it to some extent; that is, the subject states that he imagined a cast on his arm and goes on to describe it with adjectives not included in the original suggestion. The following is an example of testimony of this type:

S. My arm was stiff and I couldn't bend it until I got my cast off.

E. Can you tell me more?

S. I was nervous. I had a cast on. It had names written on it and everything.

E. What were you imagining?

S. A white cast on my arm. It had writing on it and it was in a sling.

E. Anything else?

S. I didn't like my arm being in a cast.

The second type of testimony that should be rated as "2" is one in which the subject indicates that he totally disregarded the suggested strategy and instead constructed a unique goal-directed fantasy.

For example, the following report indicates a fantasy situation quite different from that suggested:

It was really heavy. My arm was really heavy and I wanted to bend it and put it down but I couldn't. It felt like my arm was a big metal rod. It had hinges on it but they were all rusty. It just wouldn't bend.

Along similar lines, reports that include statements such as: My arm felt like it was a piece of wood, I imagined that my arm was welded to a piece of steel, or, It felt like some force was pressing on my arm, should also be scored as "2." It is important to note, that the extent to which the subject describes his ideosyncratic strategy may be less but not greater than that necessary to assign this score to a fantasy production based on the suggested strategy.

Assignment of a rating of "3." There are two criteria which must be met in order for a subject's testimony to be assigned a rating of "3." These are: (a) It must indicate that the subject employed a basic strategy (either suggested or ideosyncratic) that enabled him to experience the suggested effect, and (b) It must further indicate that the subject carried out this basic strategy within a broader and more elaborate imagined context. The following fantasy productions, based on the suggested strategy, meet these criteria:

Subject #1. I pictured a cast on my arm and it felt like it was heavy. I was kind of scared and I felt like I was in a hospital. I was laying in a bed in the hospital and I couldn't move my arm; it was very stiff and it hurt. It kind of felt like it was stiff and it felt so heavy that I couldn't bend it. It felt very very stiff.

Subject #2. I thought that I was on a doctor's chair and he was sawing it (the cast) with a saw; taking it off. My arm was tired and I thought it would hurt when the doctor sawed it off.

Similarly, the following fantasy, in which a unique strategy was employed, also meets these criteria:

S. I imagined that this big steel bar was attached to my arm so I couldn't bend it.

E. Tell me more.

S. At first I saw my arm and this bar next to it. Then someone picked up the bar and started welding it to my arm so I wouldn't be able to bend it.

E. Anything else?

S. It was really strange. I could see the sparks and everything but it didn't hurt. My arm didn't feel anything.

Each of the fantasy reports cited above should be rated as "3" because they not only include delimited patterns of imagining that are directly related to the aim of the suggestion, but also numerous associative elaborations consistent with this aim.

Criteria for Rating Third Verbal Interchange

The final verbal interchange to be rated will contain testimony regarding the subject's experiences while responding to a suggestion for amnesia for the number four. This suggestion was worded in the following manner:

I want you to forget the number four. I want you to wipe the number completely from your mind so that you are unable to think of, recall, or remember the number four in any way.

The number four will be gone completely from your mind.

You'll be unable to think of, recall, or remember this number

in any way until I instruct you to remember it.

Assignment of a rating of "0." As before, an experimenter-subject transaction should be assigned a score of "0" if it indicates that the subject either (a) did not see the situation as one in which he was to cooperate in attempting to pass the suggestion, or (b) was motivated to cooperate but failed to engage in goal-directed fantasy. The following are examples of this type of testimony:

Subject #1. When you told me that I'd forget the number four I immediately began to fight it in my mind. I thought it was silly. I knew you couldn't make me forget the number just by telling me to forget it. So when you said to forget it, I began telling myself I could remember. I kept saying the number in my mind over and over.

Subject #2. It seems like the more I tried to forget the number the more I remembered it.

E. How did you go about trying to forget?

S. I just kept saying to myself, "You'll forget four, you'll forget four," and it just didn't work.

Assignment of a rating of "1." If the subject reports a fantasy production in which only the absence of the number four is imaged, a score of "1" should be given; that is, this rating should be assigned if the number four is never present in the fantasy. Thus, a statement such as, I pictured in my mind numbers and there was a whole line of them and there wasn't any number four there, would fall into this category.

Assignment of a rating of "2." In contrast to the above, a subject's testimony should receive a rating of "2" if it indicates that

an imaginary situation was constructed in which the number four (or some symbolic representation of it) becomes absent. More specifically, the subject reports a fantasy in which the number four or a representation of it is initially present and then, for some unexplained reason, disappears. For example, a score of "2" should be assigned if the subject indicates that the number four vanished, disintegrated, floated away, etc., but fails to provide any reason for the occurrence of these events. The following is typical of this type of transaction:

- S. When you said to forget the number four, I first pictured the number one through five in my mind. Then it all fell apart.
- E. What all fell apart?
- S. The number four.
- E. Why did it fall apart?
- S. I don't know, it just disintegrated. It just wasn't there any more.

Assignment of a rating of "3." If the subject reports engaging in an elaborate fantasy, that includes both the disappearance of the number four and a reason for its disappearance, a score of "3" should be assigned. The following testimony represents this type of fantasy production:

- S. I pictured in my mind a blackboard that was written one through five, and I picked up an eraser and knocked off the number four. Then I kept counting one, two, three, five... one, two, three, five, till I was sure there was no number four.
- E. Why didn't you say the number four while counting?

S. Because I erased it off the blackboard and didn't remember it...
on the board in my brain.

The following is also an example of a response that should receive
a rating of "3:"

S. I pictured each of the numbers on a wooden block and then I saw
someone reach out and take away the one with the number four on
it.

E. Who took it away?

S. I don't know. I just saw this hand reach out and take away the
block with the number four on it.

IF THE RATER HAS ANY QUESTIONS HE SHOULD ASK THEM NOW.

VII

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